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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,824	06/22/2001	John Reader Hubbell	05222.00145	7884

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EXAMINER	
STARKS, WILBERT L	
ART UNIT	PAPER NUMBER
2129	
MAIL DATE	DELIVERY MODE
06/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/887,824	HUBBELL ET AL.	
	Examiner	**Art Unit**	
	Wilbert L. Starks, Jr.	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,19-27 and 37-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,19-27 and 37-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. §102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-9, 19-27, and 37-45 are rejected under 35 U.S.C. §102(b) as being anticipated by Nichols et al. (U.S. Patent Number US 5,987,443 A; dated 16 NOV 1999; class 706; subclass 011). Specifically:

Claim 1

Claim 1's:

> (a) receiving a goal, the goal in a specific task being within a context of a training objective of a student in a business simulation application, the goal being specified by a business deliverable and selected from the group consisting of journalizing invoice transactions structuring of a financial loan and underwriting an insurance policy;

is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

> A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose, we'll assume that the **goal of the student in a specific task is to journalize invoice transactions**, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Claim 1's:

> (b) integrating information that <u>guides</u> the student through the business simulation application to accomplish the goal by the student;

is anticipated by Nichols, et al., column 27, lines 1-16, where it recites:

> In accordance with a preferred embodiment, an <u>Intelligent Coaching Agent Tool (ICAT)</u> was developed to standardize and simplify the creation and delivery of feedback in a highly complex and open-ended environment. Feedback from a coach or tutor is instrumental in guiding the learner through an application. Moreover, by diagnosing trouble areas and recommending specific actions based on predicted student understanding of the domain student comprehension of key concepts is increased. By writing rules and feedback that correspond to a proven feedback strategy, consistent feedback is delivered throughout the application, regardless of the interaction type or of the specific designer/developer creating the feedback. The ICAT is packaged with a user-friendly workbench, so that it may be reused to increase productivity on projects requiring a similar rule-based data engine and repository.

Claim 1's:

> (c) <u>**evaluating** the progress toward the goal and providing **feedback** that further guides the student</u> to accomplish the goal for use in the presentation, comprising:

is anticipated by Nichols, et al., column 27, lines 25-32, where it recites:

> During the Execution Phase, the components are deployed to the student's platform. <u>They provide simulated team member and **feedback** functionality with sub-second response time and error-free operation</u>. If the client desires it, student tracking mechanisms can be deployed at runtime for <u>**evaluation** and administration of students</u>. This also enables the isolation of any defects that may have made it to production.

Claim 1's:

> (c)(i) obtaining student responses as the student completes the business deliverable; and

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

> A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

> Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 1's:

> (c)(ii) comparing the student responses with desired responses; and

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

> A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of

> TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

> Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 1's:

> (d) adjusting the feedback based on progress of the student toward the goal to help the student complete the business deliverable, comprising:

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 1's:

> (d)(i) activating at least one rule from a plurality of rules based on a difference between the student responses and the desired responses;

is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the

user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 1's:

(d)(ii) obtaining at least one piece of feedback responsive to (d)(i);

is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 1's:

(d)(iii) composing the at least one piece of feedback into a coherent paragraph for display to the student; and

is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 1's:

> (d)(iv) replacing at least one variable in the feedback with specifics from the student responses.

is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target

> groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 2

Claim 2's:

> 2. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, including evaluating the progress based on a number of help sessions the student accesses.

is anticipated by Nichols, et al., column 17, lines 34-44, where it recites:

> Clients may also desire to track students' progress, or control their advancement through the course. Under this strategy, after a student completes a section of the course, he will transfer his progress data to a processing center either electronically or by physically mailing a disk. There it can be analyzed to verify that he completed all required work satisfactorily. One difficulty commonly associated with student tracking is isolating the student data for analysis. It can be unwieldy to transmit all the course data, so it is often imperative to isolate the minimum data required to perform the necessary analysis of the student's progress.

Claim 3

Claim 3's:

> 3. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 2, including evaluating the progress based on work completed by the student.

is anticipated by Nichols, et al., column 17, lines 34-44, where it recites:

> Clients may also desire to track students' progress, or control their advancement through the course. Under this strategy, after a student completes a section of the course, he will transfer his progress data to a processing center either electronically or by physically mailing a disk. There it can be analyzed to verify that he completed all required work satisfactorily. One difficulty commonly associated with student tracking is isolating the student data for analysis. It can be unwieldy to transmit all the course data, so it is often imperative to isolate the minimum data required to perform the necessary analysis of the student's progress.

Claim 4

Claim 4's:

> 4. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, including evaluating the progress based on a number of changes.

is anticipated by Nichols, et al., column 55, lines 32-37, where it recites:

> The third level of feedback is appropriate for examples. Use the parameter substitution language to insert an example of an error they made into the feedback. Walk the student through the thought process he should use to solve the problem and provide and example of how they did the work right and how they did the work wrong.

Claim 5

Claim 5's:

> 5. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, including evaluating the progress based on an amount of rework.

is anticipated by Nichols, et al., column 34, lines 60-67, where it recites:

> Focusing on the educational components of completing a task is not enough. As any teacher knows, student will often try and cheat their way through a task. Students may do no work and hope the teacher does not notice or the student may only do minor changes in hope of a hint or part of the answer. To accommodate these administrative functions, there are three additional administrative categories of feedback.

Claim 6

Claim 6's:

> 6. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, including evaluating the progress based on an aggregate condition of work.

is anticipated by Nichols, et al., column 43, lines 57-67 and column 44, lines 1-5, where it recites:

> When the student is ready, he submits his work to one of the simulated team members by clicking on the team member's icon. When the ICAT receives the student's work, it calculates how much of the work is correct by concept. Concepts in our journalization activity will include Debits, Credits, Asset Accounts, etc. For each of these concepts, the ICAT will review all student actions and determine how many of the student actions were correct. In order for the ICAT to understand which targets on the interface are associated with each concept, the targets are bundled into target groups and prioritized in a hierarchy. FIG. 31 illustrates target group bundles in accordance with a preferred embodiment. For each target group--or concept, such as debit--a number of aggregate values will be calculated. These aggregate values determine how many student actions were right, wrong or irrelevant.

Claim 7

Claim 7's:

> 7. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, wherein user applications comprise: calendar, electronic mail, spreadsheet, contact list, word processing, task list, stocks and news.

is anticipated by Nichols, et al., column 11, lines 12-20, where it recites:

> A simulation engine in accordance with a preferred embodiment is based on a Microsoft Visual Basic component developed to help design and test feedback in relation to a Microsoft Excel spreadsheet These spreadsheet models are what simulate actual business functions and become a task that will be performed by a student The Simulation Engine accepts simulation inputs and calculates various outputs and notifies the system of the status of the simulation at a given time in order to obtain appropriate feedback.

Claim 8

Claim 8's:

> 8. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, wherein a tone of the feedback is adjusted based on characteristics of the student.

is anticipated by Nichols, et al., column 11, lines 12-20, where it recites:

> A simulation engine in accordance with a preferred embodiment is based on a Microsoft Visual Basic component developed to help design and test feedback in relation to a Microsoft Excel spreadsheet These spreadsheet models are what simulate actual business functions and become a task that will be performed by a student The Simulation Engine accepts simulation inputs and calculates various outputs and notifies the system of the status of the simulation at a given time in order to obtain appropriate feedback.

Claim 9

Claim 9's:

> 9. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 1, including adjusting an example based on student progress.

is anticipated by Nichols, et al., column 55, lines 32-37, where it recites:

> The third level of feedback is appropriate for examples. Use the parameter substitution language to insert an example of an error they made into the feedback. Walk the student through the thought process he should use to solve the problem and provide and example of how they did the work right and how they did the work wrong.

Claims 10-18

10-18. Cancelled

Claim 19

Claim 19's:

(a) presenting information indicative of a goal, the goal in a specific task being within a context of a training objective of a student in a business simulation application, the goal being specified by a business deliverable and selected from the group consisting of journalizing invoice transactions, structuring of a financial loan, and underwriting an insurance policy;

is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose, we'll assume that the **goal** of the student in a specific task is to **journalize invoice transactions**, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Claim 19's:

(b) integrating information that guides the student through the business simulation application to accomplish of the goal by the user in a simulated environment goal for use in the presentation; and

is anticipated by Nichols, et al., column 27, lines 1-16, where it recites:

In accordance with a preferred embodiment, an Intelligent Coaching Agent Tool (ICAT) was developed to standardize and simplify the creation and delivery of feedback in a highly complex and open-ended environment. Feedback from a coach or tutor is instrumental in guiding the learner through an application. Moreover, by diagnosing trouble areas and recommending specific actions based on predicted student understanding of the domain student comprehension of key concepts is increased. By writing rules and feedback that correspond to a proven feedback strategy, consistent feedback is delivered throughout the

application, regardless of the interaction type or of the specific designer/developer creating the feedback. The ICAT is packaged with a user-friendly workbench, so that it may be reused to increase productivity on projects requiring a similar rule-based data engine and repository.

Claim 19's:

(c) monitoring progress toward the goal and providing feedback that further guides the student to accomplish of the goal in the simulated environment to help the student complete the business deliverable, comprising:

is anticipated by Nichols, et al., column 27, lines 25-32, where it recites:

During the Execution Phase, the components are deployed to the student's platform. <u>They provide simulated team member and **feedback** functionality with sub-second response time and error-free operation</u>. If the client desires it, student tracking mechanisms can be deployed at runtime for <u>**evaluation** and administration of students</u>. This also enables the isolation of any defects that may have made it to production.

Claim 19's:

(c)(i) obtaining student responses as the student completes the business deliverable;

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

> Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 19's:

> (c)(ii) comparing the student responses with desired responses;

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

> A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

> Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 19's:

> (c)(iii) activating at least one rule from a plurality of rules based on a difference between the student responses and the desired responses;

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for

> the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 19's:

> (c)(iv) obtaining at least one piece of feedback responsive to (c)(iii); and

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly

completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 19's:

(c)(v) composing the at least one piece of feedback into a coherent paragraph for display to the student.

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will

look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 20

Claim 20's:

20. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including simulating management of one or more resources in the simulated environment.

is anticipated by Nichols, et al., column 140, lines 18-22, where it recites:

Time based simulation where student "chooses own adventure". Each period the student selects from a pre-determined list of actions to take. Developed on SBPC as a simplified version of the BDM **manage task**.

Claim 21

Claim 21's:

21. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including setting a context for a problem in the simulated environment.

is anticipated by Nichols, et al., column 13, lines 16-34, where it recites:

Even if companies didn't make the mistake of focusing on "what" learning vs. "how" learning, they still tend to have the overly narrow view of education/training as something that only occurs prior to workers being asked to actually perform their job. Learning is something that is constantly occurring, and doesn't cease once "real work" has begun. The closer new lessons occur in time with the application of those lessons, the greater the resultant learning. This fact helps to explain some of the reasoning behind the benefits of business simulation,

> described in the previous section. In those systems, all new lessons are taught in close relationship to their real world use; everything is in context and, most importantly, are presented at the appropriate time. But as the properly trained worker performs their job, the working environment changes. New demands occur, and new methods and rules are developed. As these events occur, there is a need for new support/training that, in most cases, must wait to be addressed until the next "pre-performance" training session.

Further, it is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

> A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose, we'll assume that the goal of the student in a specific task is to journalize invoice transactions, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Further, it is anticipated by Nichols, et al., column 37, lines 37-44, where it recites:

> An activity is a business event, such as planning a company's financials or closing the books. Business events set the context of the course. Students learn the content so that they can complete the goals associates with each business event. The power of a GBS is in how it embeds the content a student needs to learn within the context of the business events.

Further, it is anticipated by Nichols, et al., column 38, lines 7-21, where it recites:

> In preparation for the pitches, the students complete computer-based modules. There are two major sections to each module, the accounting concepts and the activities. Students learn the concepts and ideas in the accounting concepts and apply the concepts in the activities. All of the

> modules together represent the different phases associated with running a business: Start Operations, Analyze Operations and Improve Operations. Each computer-based activity represents a business event, such as closing the books of the company. These business events provide context for the content the students learn in the course. In this way, students not only learn what the concepts are but when, how and why they should use them.

Claim 22

Claim 22's:

> 22. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including stimulating management of preventative maintenance in the simulated environment.

is anticipated by Nichols, et al., column 17, lines 21-27, where it recites:

> The Execution Phase refers to the steady state operation of the completed application in its production environment. For some clients, this involves phone support for students. Clients may also want the ability to track students' progress and control their progression through the course. Lastly, clients may want the ability to track issues so they may be considered for inclusion in course maintenance releases.

Claim 23

Claim 23's:

> 23. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including simulating recovery management in the simulated environment.

is anticipated by Nichols, et al., column 140, lines 18-22, where it recites:

> **Time based simulation** where student "chooses own adventure". Each period the student selects from a pre-determined list of actions to take. Developed on SBPC as a simplified version of the BDM **manage task**.

Further, it is anticipated by Nichols, et al., column 29, lines 10-26, where it recites:

> Any project which is creating a goal-Based Scenario (GBS) business simulation or an Integrated Performance Support (IPS) system to help users understand and create business deliverables can profit from technology in accordance with a preferred embodiment. A GBS allows students to learn in a comprehensive simulated environment. Students work in a simulated environment to accomplish real world tasks, and when they make mistakes, remediation is provided to help identify and correct the mistakes. The hands-on experience of the simulated environment and the timely remediation account for the high retention rate from subjects presented utilizing a system in accordance with a preferred embodiment. A system in accordance with a preferred embodiment can be used in conjunction with an IPS to help users develop deliverables. If a customer service representative (CSR) is completing a form while conducting a phone conversation, the ICAT can be used to observe how the task is completed to provide a live analysis of mistakes.

Claim 24

Claim 24's:

> 24. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including simulating evaluative decision making in the simulated environment.

is anticipated by Nichols, et al., Abstract, where it recites:

> A system is disclosed that provides a goal based learning system utilizing a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the

> learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Further, is anticipated by Nichols, et al., column 1, lines 62-67 and column 2, lines 1-13, where it recites:

> According to a broad aspect of a preferred embodiment of the invention, a goal based learning system utilizes a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Claim 25

Claim 25's:

> 25. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including simulating a conversation in the simulated environment.

is anticipated by Nichols, et al., column 15, lines 65-67 and column 16, lines 1-13, where it recites:

> During the build phase, the application development team uses the detailed designs to code the application. Coding tasks include the interfaces and widgets that the student interacts with. The interfaces can be made up of buttons, grids, check boxes, or any other screen controls

that allow the student to view and manipulate his deliverables. The developer must also code logic that analyzes the student's work and provides feedback interactions. These interactions may take the form of text and/or multimedia feedback from simulated team members, conversations with simulated team members, or direct manipulations of the student's work by simulated team members. In parallel with these coding efforts, graphics, videos, and audio are being created for use in the application. Managing the development of these assets have their own complications.

Claim 26

Claim 26's:

26. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including simulating a negotiation in the simulated environment.

is anticipated by Nichols, et al., Abstract, where it recites:

A system is disclosed that provides a goal based learning system utilizing a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Further, is anticipated by Nichols, et al., column 1, lines 62-67 and column 2, lines 1-13, where it recites:

> According to a broad aspect of a preferred embodiment of the invention, a goal based learning system utilizes a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Claim 27

Claim 27's:

> 27. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 19, including invoking a concept parser in the simulated environment.

is anticipated by Nichols, et al., column 24, lines 32-37, where it recites:

> Concepts are objects that represent real-world concepts that the user will be faced with in the interface. Concepts can be broken into sub-concepts, creating a hierarchical tree of concepts. This tree can be arbitrarily deep and wide to support rich concept modeling. Concepts can also own an arbitrary number of Coach Topics.

Claim 28-36

28-36. Cancelled

Claim 37

Claim 37's:

(a) receiving indicia representative of a goal into a model, the goal in a specific task being within a context of a training objective of a plurality of students in a business simulation application, the goal being specified by a business deliverable and selected from the group consisting of journalizing invoice transactions, structuring of a financial loan, and underwriting an insurance policy;

is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose, we'll assume that the <u>**goal** of the student in a specific task is to **journalize invoice transactions**</u>, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Claim 37's:

(b) integrating information that provides assistance with achieving the goal, by the plurality of students, into a tutor for use in the presentation;

is anticipated by Nichols, et al., column 27, lines 1-16, where it recites:

In accordance with a preferred embodiment, an <u>Intelligent Coaching Agent Tool (ICAT)</u> was developed to standardize and simplify the creation and delivery of feedback in a highly complex and open-ended environment. Feedback from a coach or tutor is instrumental in guiding the learner through an application. Moreover, by diagnosing trouble areas and recommending specific actions based on predicted student understanding of the domain student comprehension of key concepts is increased. By writing rules and feedback that correspond to a proven feedback strategy, consistent feedback is delivered throughout the application, regardless of the interaction type or of the specific designer/developer creating the feedback. The ICAT is packaged with a user-friendly workbench, so that it may be reused to increase productivity on projects requiring a similar rule-based data engine and repository.

Claim 37's:

(c) monitoring progress of the plurality of students toward the goal, comprising:

is anticipated by Nichols, et al., column 27, lines 25-32, where it recites:

During the Execution Phase, the components are deployed to the student's platform. They provide simulated team member and **feedback** functionality with sub-second response time and error-free operation. If the client desires it, student tracking mechanisms can be deployed at runtime for **evaluation** and administration of students. This also enables the isolation of any defects that may have made it to production.

Claim 37's:

(c)(i) obtaining student responses as the plurality of students complete the business deliverable; and

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small

> section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 37's:

> (c)(ii) comparing the student responses with desired responses; and

is anticipated by Nichols, et al., column 8, lines 17, where it recites:

> A TargetGroup object represents a concept being learned. It is a group of Target objects related on a conceptual level. The TargetGroup objects in a Task are arranged in a hierarchy related to the hierarchy of concepts the student must learn. By analyzing the student's responses to the Targets in a TargetGroup, the ICAT can determine how well a student knows the concept. By utilizing the conceptual hierarchy of TargetGroups the ICAT can determine the most appropriate remediation to deliver to help the student understand the concepts.

Further, it is anticipated by Nichols, et al., column 44, lines 47-63, where it recites:

> Therefore when the when the ICAT determines how much of the task is correct, it will calculate values for the first three journal entries and the next sixteen. Calculating these two separate numbers will allow the ICAT to provide specific feedback about the first three and separate feedback about the next sixteen transactions. Here is a section of the target group hierarchy for the journalize task. FIG. 33 illustrates a small section the amount of feedback in accordance with a preferred embodiment. By analyzing the responses to the targets in the each of the targetgroups, we can determine how many of the transactions the student has attempted, whether mistakes were made, what the mistakes were, etc. We can then assemble feedback that is very specific to the way the student completed the deliverables. By analyzing the student's responses to a group of conceptually related requests, we can determine the degree of success with which the student is learning the concept.

Claim 37's:

> (d) providing feedback that further assists the plurality of students in accomplishing the goal to help the plurality of students complete the business deliverable, comprising:

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 37's:

> (d)(i) activating at least one rule from a plurality of rules based on a difference between the student responses and the desired responses;

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 37's:

> (d)(ii) obtaining at least one piece of feedback responsive to (d (i); and

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 37's:

> (d)(iii) composing the at least one piece of feedback into a coherent paragraph for display to the student.

is anticipated by Nichols, et al., column 36, lines 66-67 and column 37, lines 1-5, where it recites:

> FIGS. 18 and 19 illustrate a feedback display in accordance with a preferred embodiment. As a student attempts to correct transactions one and two unsuccessfully, the tutor starts to provide hints, stating that the student should debit an asset account and credit an equity account. The ICAT continues to focus on the errors in the first three source documents and is giving progressively more specific hints.

Further, it is anticipated by Nichols, et al., column 45, lines 14-39, where it recites:

> After the ICAT has activated CoachTopics via Rule firings, the Feedback Selection Algorithm is used to determine the most appropriate set of CoachItems (specific pieces of feedback text associated with a CoachTopic) to deliver. The Algorithm accomplishes this by analyzing the concept hierarchy (TargetGroup tree), the active CoachTopics, and the usage history of the CoachItems. FIG. 36 is a flowchart of the feedback logic in accordance with a preferred embodiment. There are five main areas to the feedback logic which execute sequentially as listed below. First, the algorithm looks through the target groups and looks for the top-most target group with an active coach topic in it. Second, the algorithm then looks to see if that top-most coach item is praise feedback. If it is praise feedback, then the student has correctly completed the business deliverable and the ICAT will stop and return that coach item. Third, if the feedback is not Praise, then the ICAT will look to see if it is redirect, polish, mastermind or incomplete-stop. If it is any of these, then the algorithm will stop and return that feedback to the user. Fourth, if the feedback is focus, then the algorithm looks to the children target groups and groups any active feedback in these target groups with the focus group header. Fifth, once the feedback has been gathered, then the substitution language is run which replaces substitution variables with the proper names.

Claim 38

Claim 38's:

> (a) receiving an indicia representative of a plurality of goals into a model;

is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

> A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose, we'll assume that the **goal** of the student in a specific task is to **journalize invoice transactions**, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Claim 38's:

> (b) integrating information that provides assistance with achieving the plurality of goals into a tutor; and

is anticipated by Nichols, et al., column 27, lines 1-16, where it recites:

> In accordance with a preferred embodiment, an Intelligent Coaching Agent Tool (ICAT) was developed to standardize and simplify the creation and delivery of feedback in a highly complex and open-ended environment. Feedback from a coach or tutor is instrumental in guiding the learner through an application. Moreover, by diagnosing trouble areas and recommending specific actions based on predicted student understanding of the domain student comprehension of key concepts is increased. By writing rules and feedback that correspond to a proven feedback strategy, consistent feedback is delivered throughout the application, regardless of the interaction type or of the specific designer/developer creating the feedback. The ICAT is packaged with a user-friendly workbench, so that it may be reused to increase productivity on projects requiring a similar rule-based data engine and repository.

Claim 38's:

> (c) monitoring progress of a student toward the goal and providing feedback that assists the student in accomplishing the plurality of goals.

is anticipated by Nichols, et al., column 27, lines 25-32, where it recites:

During the Execution Phase, the components are deployed to the student's platform. They provide simulated team member and **feedback** functionality with sub-second response time and error-free operation. If the client desires it, student tracking mechanisms can be deployed at runtime for **evaluation** and administration of students. This also enables the isolation of any defects that may have made it to production.

Claim 39

Claim 39's:

39. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including setting a context for a problem in a simulated environment.

is anticipated by Nichols, et al., column 13, lines 16-34, where it recites:

Even if companies didn't make the mistake of focusing on "what" learning vs. "how" learning, they still tend to have the overly narrow view of education/training as something that only occurs prior to workers being asked to actually perform their job. Learning is something that is constantly occurring, and doesn't cease once "real work" has begun. The closer new lessons occur in time with the application of those lessons, the greater the resultant learning. This fact helps to explain some of the reasoning behind the benefits of business simulation, described in the previous section. In those systems, all new lessons are taught in close relationship to their real world use; everything is in context and, most importantly, are presented at the appropriate time. But as the properly trained worker performs their job, the working environment changes. New demands occur, and new methods and rules are developed. As these events occur, there is a need for new support/training that, in most cases, must wait to be addressed until the next "pre-performance" training session.

Further, it is anticipated by Nichols, et al., column 27, lines 34-46, where it recites:

A good way to gain a better appreciation for how the BusSim Toolset can vastly improve the BusSim development effort is to walk through scenarios of how the tools would be used throughout the development lifecycle of a particular task in a BusSim application. For this purpose,

> we'll assume that the goal of the student in a specific task is to journalize invoice transactions, and that this task is within the broader context of learning the fundamentals of financial accounting. A cursory description of the task from the student's perspective will help set the context for the scenarios. Following the description are five scenarios which describe various activities in the development of this task. The figure below shows a screen shot of the task interface.

Further, it is anticipated by Nichols, et al., column 37, lines 37-44, where it recites:

> An activity is a business event, such as planning a company's financials or closing the books. Business events set the context of the course. Students learn the content so that they can complete the goals associates with each business event. The power of a GBS is in how it embeds the content a student needs to learn within the context of the business events.

Further, it is anticipated by Nichols, et al., column 38, lines 7-21, where it recites:

> In preparation for the pitches, the students complete computer-based modules. There are two major sections to each module, the accounting concepts and the activities. Students learn the concepts and ideas in the accounting concepts and apply the concepts in the activities. All of the modules together represent the different phases associated with running a business: Start Operations, Analyze Operations and Improve Operations. Each computer-based activity represents a business event, such as closing the books of the company. These business events provide context for the content the students learn in the course. In this way, students not only learn what the concepts are but when, how and why they should use them.

Claim 40

Claim 40's:

> 40. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating management of preventative maintenance in a simulated environment.

is anticipated by Nichols, et al., column 17, lines 21-27, where it recites:

> The Execution Phase refers to the steady state operation of the completed application in its production environment. For some clients, this involves phone support for students. Clients may also want the ability to track students' progress and control their progression through the course. Lastly, clients may want the ability to track issues so they may be considered for inclusion in course maintenance releases.

Claim 41

Claim 41's:

> 41. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating recovery management in a simulated environment.

is anticipated by Nichols, et al., column 140, lines 18-22, where it recites:

> **Time based simulation** where student "chooses own adventure". Each period the student selects from a pre-determined list of actions to take. Developed on SBPC as a simplified version of the BDM **manage task**.

Further, it is anticipated by Nichols, et al., column 29, lines 10-26, where it recites:

> Any project which is creating a goal-Based Scenario (GBS) business simulation or an Integrated Performance Support (IPS) system to help users understand and create business deliverables can profit from technology in accordance with a preferred embodiment. A GBS allows students to learn in a comprehensive simulated environment. Students work in a simulated environment to accomplish real world tasks, and when they make mistakes, remediation is provided to help identify and

correct the mistakes. The hands-on experience of the simulated environment and the timely remediation account for the high retention rate from subjects presented utilizing a system in accordance with a preferred embodiment. A system in accordance with a preferred embodiment can be used in conjunction with an IPS to help users develop deliverables. If a customer service representative (CSR) is completing a form while conducting a phone conversation, the ICAT can be used to observe how the task is completed to provide a live analysis of mistakes.

Claim 42

Claim 42's:

42. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating evaluative decision making in a simulated environment.

is anticipated by Nichols, et al., Abstract, where it recites:

A system is disclosed that provides a goal based learning system utilizing a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Further, is anticipated by Nichols, et al., column 1, lines 62-67 and column 2, lines 1-13, where it recites:

> According to a broad aspect of a preferred embodiment of the invention, a goal based learning system utilizes a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Claim 43

Claim 43's:

> 43. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating a conversation in a simulated environment.

is anticipated by Nichols, et al., column 15, lines 65-67 and column 16, lines 1-13, where it recites:

> During the build phase, the application development team uses the detailed designs to code the application. Coding tasks include the interfaces and widgets that the student interacts with. The interfaces can be made up of buttons, grids, check boxes, or any other screen controls that allow the student to view and manipulate his deliverables. The developer must also code logic that analyzes the student's work and provides feedback interactions. These interactions may take the form of text and/or multimedia feedback from simulated team members, conversations with simulated team members, or direct manipulations of the student's work by simulated team members. In parallel with these coding efforts, graphics, videos, and audio are being created for use in the application. Managing the development of these assets have their own complications.

Claim 44

Claim 44's:

> 44. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating a takeover in a simulated environment.

is anticipated by Nichols, et al., Abstract, where it recites:

> A system is disclosed that provides a goal based learning system utilizing a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Further, is anticipated by Nichols, et al., column 1, lines 62-67 and column 2, lines 1-13, where it recites:

> According to a broad aspect of a preferred embodiment of the invention, a goal based learning system utilizes a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world

> consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Claim 45

Claim 45's:

> 45. (Previously Presented) The computer-implemented method for creating the presentation as recited in claim 37, including simulating a negotiation in a simulated environment.

is anticipated by Nichols, et al., Abstract, where it recites:

> A system is disclosed that provides a goal based learning system utilizing a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Further, is anticipated by Nichols, et al., column 1, lines 62-67 and column 2, lines 1-13, where it recites:

> According to a broad aspect of a preferred embodiment of the invention, a goal based learning system utilizes a rule based expert training system to provide a cognitive educational experience. The system provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted and remedial educational material presented dynamically to build the necessary skills that a user requires for success in the business endeavor. The system utilizes an artificial intelligence engine driving individualized and dynamic

> feedback with synchronized video and graphics used to simulate real-world environment and interactions. Multiple "correct" answers are integrated into the learning system to allow individualized learning experiences in which navigation through the system is at a pace controlled by the learner. A robust business model provides support for realistic activities and allows a user to experience real world consequences for their actions and decisions and entails realtime decision-making and synthesis of the educational material.

Claim 46-54

46-54. Cancelled

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. Specifically:

A. Bertrand et al. (U.S. Patent Number 6,018,731 A; dated 25 JAN 2000; class 706; subclass 047) discloses a system, method and article of manufacture for a goal based system utilizing a spreadsheet and table based architecture.

B. Nichols et al. (U.S. Patent Number 6,018,730 A; dated 25 JAN 2000; class 706; subclass 045) discloses a system, method and article of manufacture for a simulation engine with a help website and processing engine.

C. Nichols (U.S. Patent Number 6,016,486 A; dated 18 JAN 2000; class 706; subclass 047) discloses a system method and article of manufacture for a goal based system utilizing an activity table.

D. Zadik et al. (U.S. Patent Number 6,003,021 A; dated 14 DEC 1999; class 706; subclass 047) discloses a system, method and article of manufacture for a simulation system for goal based education.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (571) 272-3691.

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